

Chemistry 300–The Literature of Chemistry–Fall 2008
Monday & Friday, 13-14:15, SCI2 206

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Assisted by Science Librarian Pearl Ly

Course Description: Introduces the student to techniques of finding, reading, and writing chemical and other scientific literature for upper-division work in the natural sciences. Includes standard reference works in Chemistry, journals and monographs, Chemical Abstracts, Science Citation Index, and other print and online resources. Students write research proposals and journal-quality scientific papers, including figures and graphs using up-to-date computer tools. Students learn strategies for reading difficult scientific papers and give oral presentations of research.

Learning Objectives:

1. Students will learn how to access chemical information using general library techniques as well as search tools and resources unique to the laboratory sciences and especially to chemistry.

2. Students will learn how the scientific literature is written, and will demonstrate their understanding of the appropriate structure and style by producing a formal scientific paper.

3. Students will understand the importance of graphics in communicating scientific ideas and will demonstrate the ability to generate publication-quality graphics.

4. Students will use their knowledge of how science is written to better extract the important scientific arguments out of scientific papers and communications.

5. Students will understand and demonstrate appropriate styles of oral presentations of research.

6. Students will exercise their creativity in design of a simple scientific project and learn how to propose, execute and report on such a project.

Course Format: Students will work independently on library projects and on a scientific paper writing project. Class time will be spent on lectures and group exercises in library research, reading, and writing.

Required Textbook: Ann M. Penrose and Steven B. Katz, *Writing in the Sciences: Exploring Conventions of Scientific Discourse, Second Edition*. Pearson/Longman, 2004.

Requirements:

Homework: On the enclosed schedule is a complete list of homework assignments, the dates on which they are due, and the points they are worth. Some assignments are submitted more than once; for example, the research paper is submitted in pieces once, again as a revised paper, and finally after peer review. At each submission, the points are awarded according to expectations appropriate to the level of the draft. Thus a very good *first draft* of the Experimental Section and Results may get 20 points, despite some flaws, because some flaws are expected in a first draft. However, if no improvements are made, the same work may receive only 15 points because higher quality is expected at the second-draft stage.

Note that one or two homework assignments will require you to visit the UCSD library.

Class Activities: There will many in-class activities which are designed to build research, reading, writing or speaking skills, or to test the skills or knowledge which have been acquired in previous weeks. These activities will have assessable outcomes worth 10 points each week. Because these activities will often have a component which involves interaction with other students, there will generally be **no make-up opportunities** for activities missed due to absence. The lowest 2 or 3 scores, including zeros for absences, will be dropped before calculation of the final grade.

Quizzes: There will be up to five 10-point quizzes scattered randomly throughout the course, the purpose of which will be to check for absorption of the reading material and key concepts. There will also be a "Final Quiz" on the day scheduled for the Final Examination in this course, worth 50 points.

Approximate Anticipated Points: These totals may vary somewhat as a result of adjustments to homework and class activity changes.

Homework	240 points = 44.4 %
Class Activities	200 points = 37.0 %
Quizzes	100 points = 18.5%
Total:	540 points = 100.00 %

Plus and minus grading will be employed in this course.

Late Policy: As shown on the following pages, assignments have been very carefully scheduled to ensure a smooth flow of the course and to avoid unduly taxing the student. Because of the peer review process, late assignments will detract from other students' learning in the course. Therefore, assignments turned in after the due date will suffer a 25% reduction in points if turned in within 3 calendar days of the due date, and a 50% reduction if turned in thereafter.

Students with Disabilities: Students with disabilities who require reasonable accommodations must be approved for services by providing appropriate and recent documentation to the Office of Disabled Student Services (DSS). This office is located in Craven Hall 5205, and can be contacted by phone at (760) 750-4905, or TTY (760) 750-4909. Students authorized by DSS to receive reasonable accommodations should meet with me during my office hours or in a more private setting in order to ensure confidentiality.

Academic Honesty: Cheating, plagiarism and other forms of academic dishonesty are offenses for which a student may be expelled, suspended, put on probation, or given a less severe disciplinary sanction. *Cheating* involves the use or attempted use of unauthorized materials, information, or study aids in any academic exercise, especially examinations. Intentionally or knowingly helping or attempting to help another student to commit an act of academic dishonesty constitutes *facilitating academic dishonesty*, and is also subject to disciplinary action. *Fabrication* is the falsification or invention of data or citations in laboratory or writing assignments. *Plagiarism*, which involves intentionally or knowingly representing the words, ideas, or work of another as one's own, especially in writing assignments, will also result in disciplinary actions being taken.

Your instructor is skilled at the detection of cheating and plagiarism and the consequences could be severe. Your best preparation for your future lies in learning the course material; the benefits of academic dishonesty are temporary at best and not worth the trouble it takes to avoid detection.

TENTATIVE SCHEDULE

CHEM 300--FALL 2007

Lecture In-Class Project	<i>Library Presentation</i> Homework
8/25/08 Introduction read pp. 3-22 for 1/25/07	8/27/08 Creativity and Convention in Science Ethos and Ethics (10 points) read pp. 32-33; 128-150 for 9/3/07
9/1/08 Labor Day Holiday	9/3/08 Visualization and Creativity Research Brainstorming (10 pts) Draft Experimental Plans (10 points), due 9/8/08
9/8/08 Writing Research Proposals Write Research Proposal (15 points), due 9/22/07	9/10/08 <i>General Reference Works</i> Reference Works Worksheet (10 points) read pp. 24-31 for 9/15/08
9/15/08 The History of Scientific Journals	9/17/08 <i>Scientific Publishing; Types of Literature</i> Types of Literature Worksheet (10 points)
9/22/08 <i>Books, Library Catalog, and Electronic Books</i> Books & Catalog Worksheet (10 points)	9/24/08 <i>Databases and Journals</i> Journal and Database Worksheet (10 pts) Rewrite Research Proposal (25 points), due 10/01/08
9/29/08 <i>Online Resources</i> Online Worksheet (10 points) read pp. 77-78 for 10/01/08	10/1/08 How to Read a Scientific Article, Part I Looking at Articles (10 points) read pp. 83-101 for 10/6/08
10/6/08 The Value and Purpose of Cited References Tracing Cited References (25 points) review pp. 12-16; read 95-100 for 10/08/08 BEGIN EXPERIMENTAL WORK ON PROJECT	10/8/08 How to Read a Scientific Article, Part II Reading for Argument Finding the Arguments (10 points) BEGIN EXPERIMENTAL WORK ON PROJECT
10/13/08 Chemical Abstracts--Print & Online CA Print Worksheet (10 points) Chem Abs. Online Exercise (25 points) EXPERIMENTAL WORK ON PROJECT	10/15/08 Web of Science: Science Citation Index Web of Science Assignment (25 points) (due 10/29/08) EXPERIMENTAL WORK ON PROJECT
10/20/08 Technical Reference Works Tech Reference Worksheet (10) EXPERIMENTAL WORK ON PROJECT	10/22/08 Grammar for Scientists Tense and Voice exercise (10 points) read pp. 76-77; 40-45; 50-54 for 10/27/08 EXPERIMENTAL WORK ON PROJECT

<p>10/27/08 Writing the Experimental Section Experimental Section Exercise (10 points) Write Exp. Section (10 points), due 11/03/08 read pp. 56-62 for 10/29/08</p> <p>EXPERIMENTAL WORK ON PROJECT</p>	<p>10/29/08 Writing the Results; Tables & Graphs Tables and Graphs Exercise (10 points) Write Results (10 points) due 11/03/08 read pp. 62-68 for 11/3/08</p>
<p>11/3/08 Writing Discussions Discussion Exercise (10 points) Write Discussion (10 points) due 11/10/08 read pp. 45-50; 68-73 for 11/5/08</p>	<p>11/5/08 Writing Introductions, Abstracts and Title Intro, Abstract & Title Exercise (10 points) Write Introduction, Abstract and Title (15 points) due 11/10/08</p>
<p>11/10/08 Improving Writing Improving Writing Exercise (10 points)</p>	<p>11/12/08 Oral Presentations of Research PowerPoint Exercise (10 points) Rewrite Paper (25 points) due 11/17/08 read pp. 79-80 for 11/17/08</p>
<p>11/17/08 Peer Review Peer Review of 2 articles (15 points) due 11/24/08</p>	<p>11/19/08 How to Read a Scientific Article, Part III Article Analysis (10 points)</p>
<p>11/24/08 Chemical Graphics (10 points) Prepare Oral Presentation of Research, due 12/1/08 or 12/3/08</p>	<p>11/26/08 Article Analysis (10 points) Write Final Draft of Paper, with Response to Reviewers (15 points), due 12/03/08</p>
<p>12/1/08 Oral Presentation of Household Chemistry Project (25 points)</p>	<p>12/3/08 Oral Presentation of Household Chemistry Project (25 points)</p>
<p>12/8/08 Final Examination 11:30 am-1:30 pm</p>	